

# FCL-16PTS Series

PARALLEL TWIN SPINDLE TURNING CENTER



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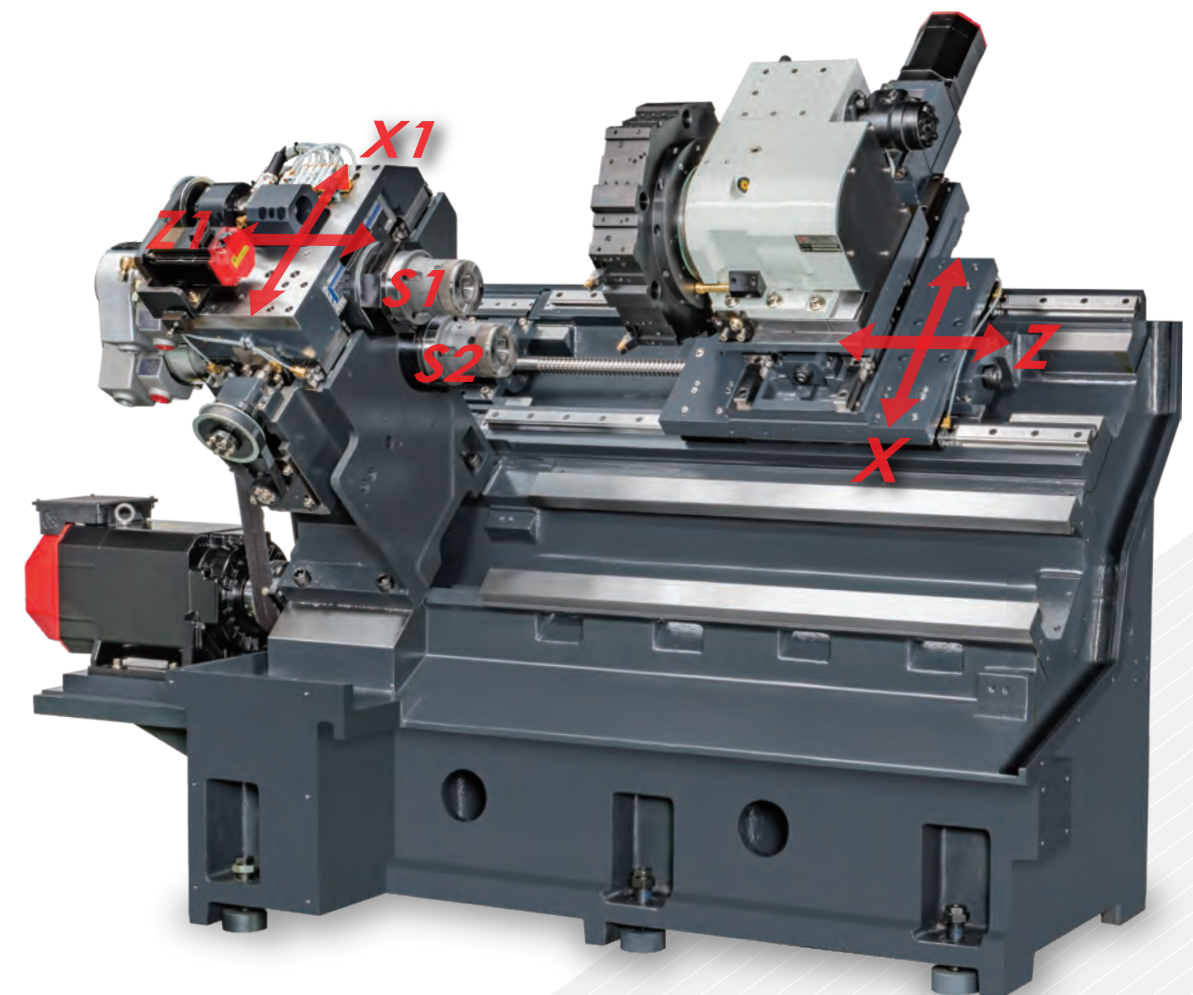


PATENT No. M612298



FCL-16PTS DOUBLE PRODUCTIVITY  
IDEAL FOR AUTOMATED PRODUCTION LINES

The FCL-16PTS series turning center basic structure is specially designed with 2 sets of parallel spindles in combination with high efficiency nine stations on hydraulic power. Each station can be equipped with two tool holders, and the loading capacity of the hydraulic turret is 18 tools. This enables the machine to achieve double throughput. In addition, it also dramatically reduces investment costs and electricity consumption, with a space-saving design that creates high productivity per unit area.



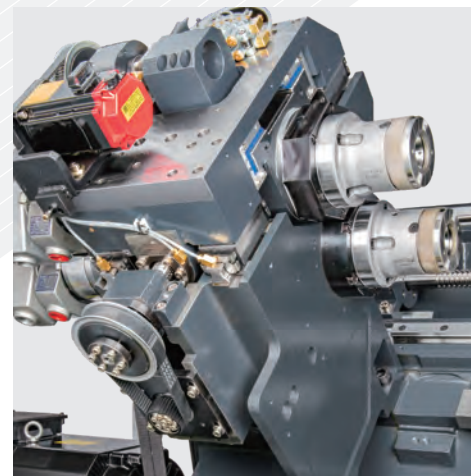
A COMBINATION OF  
LINEAR GUIDEWAYS AND BOX WAYS DESIGN

- X / Z axis are cutting feed axis, which are mounted with precision linear guideways. Rapid traverse rates on X and Z axis can reach 30 m/min for increasing machining efficiency.
- X1 axis is a tool compensation axis, which is mounted with precision linear guideways to ensure compensation accuracy. Z1 axis is designed with box ways that exhibit outstanding rigidity.

## MACHINE FEATURES

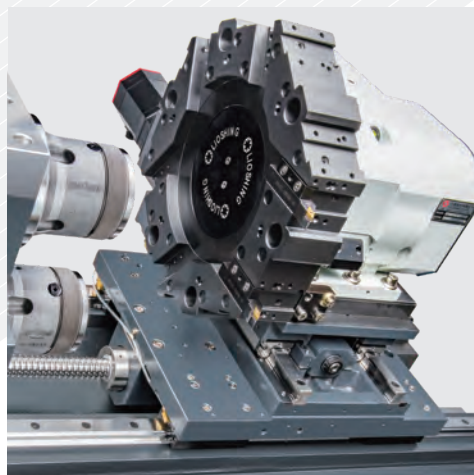
### PARALLEL TWIN SPINDLE S1/S2

This machine is equipped with a 6000 RPM high speed precision spindle, which is driven by a high torque spindle motor. It provides high machining efficiency and fine finish on machining surface. The spindle is fitted with a Ø5" 3 jaw hydraulic hollow chuck.

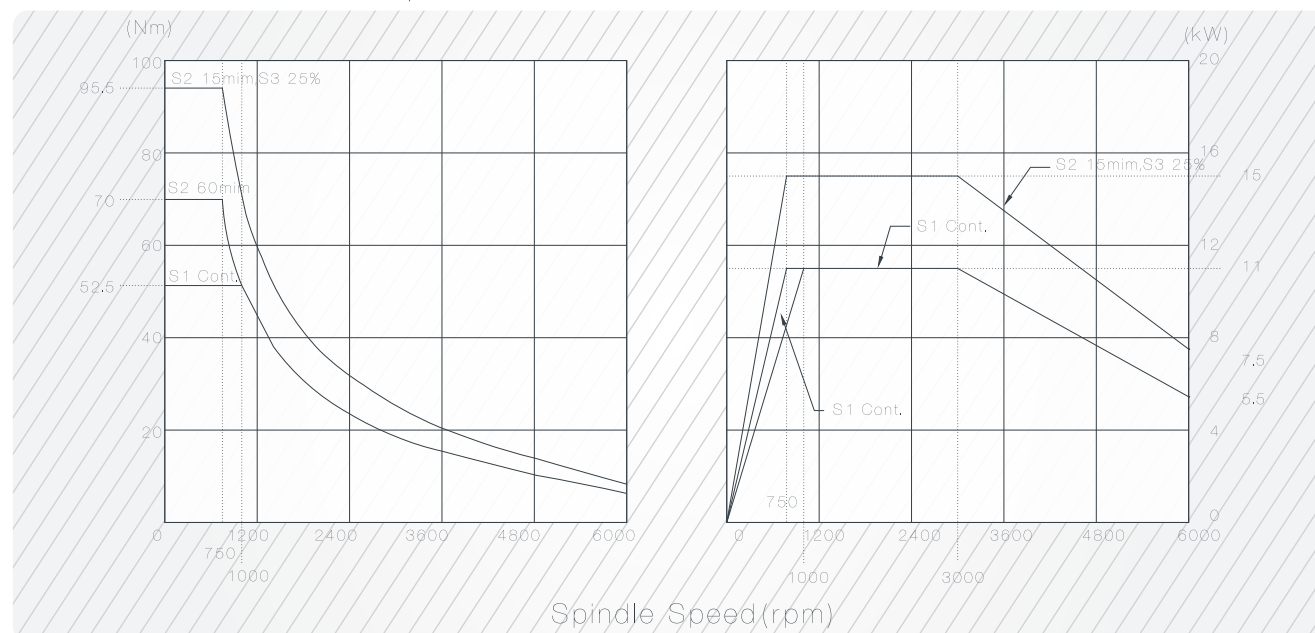


### 18TOOLS HYDRAULIC TURRET

The machine is equipped with a 9-station hydraulic turret. Each station is equipped with two tools, and the loading capacity of the turret is 18 tools. Among which, six stations are fitted with O.D. / I.D. / facing tool holders, and the remaining three stations only can be fitted with I.D. sleeves.



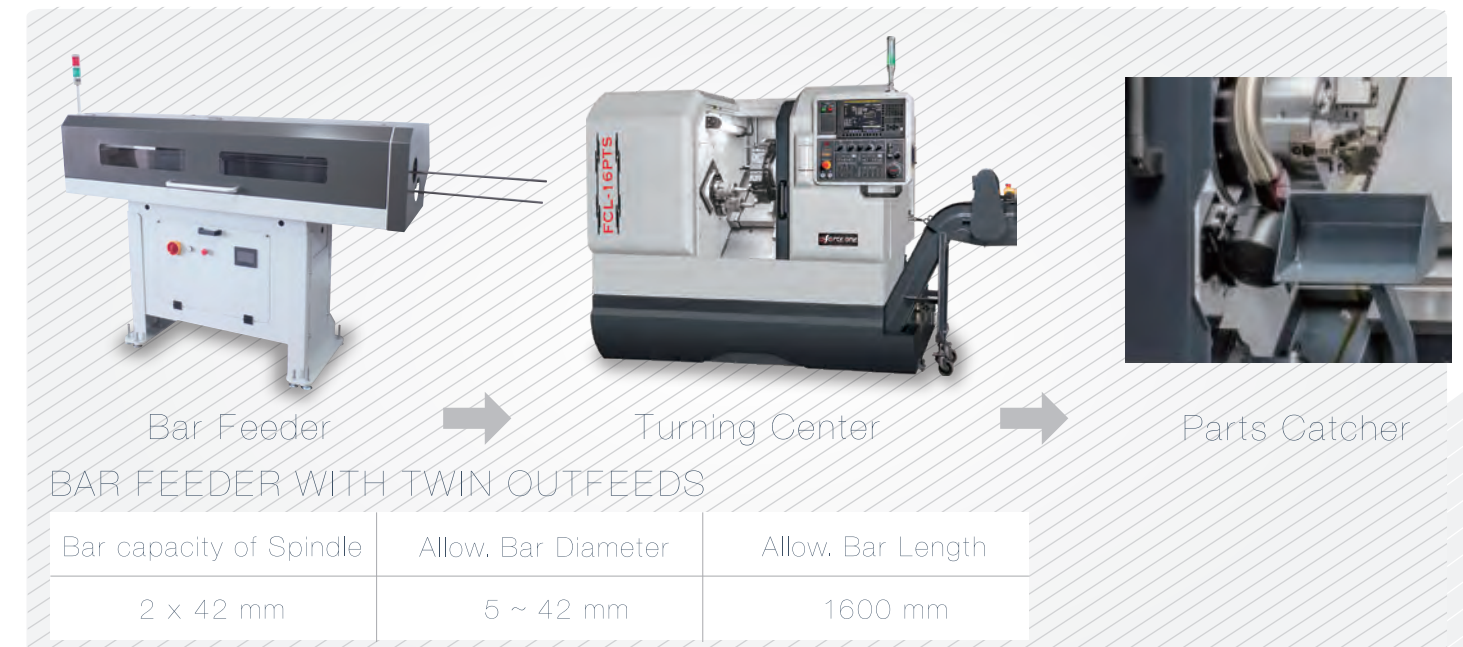
### SPINDLE POWER / TORQUE DIAGRAM



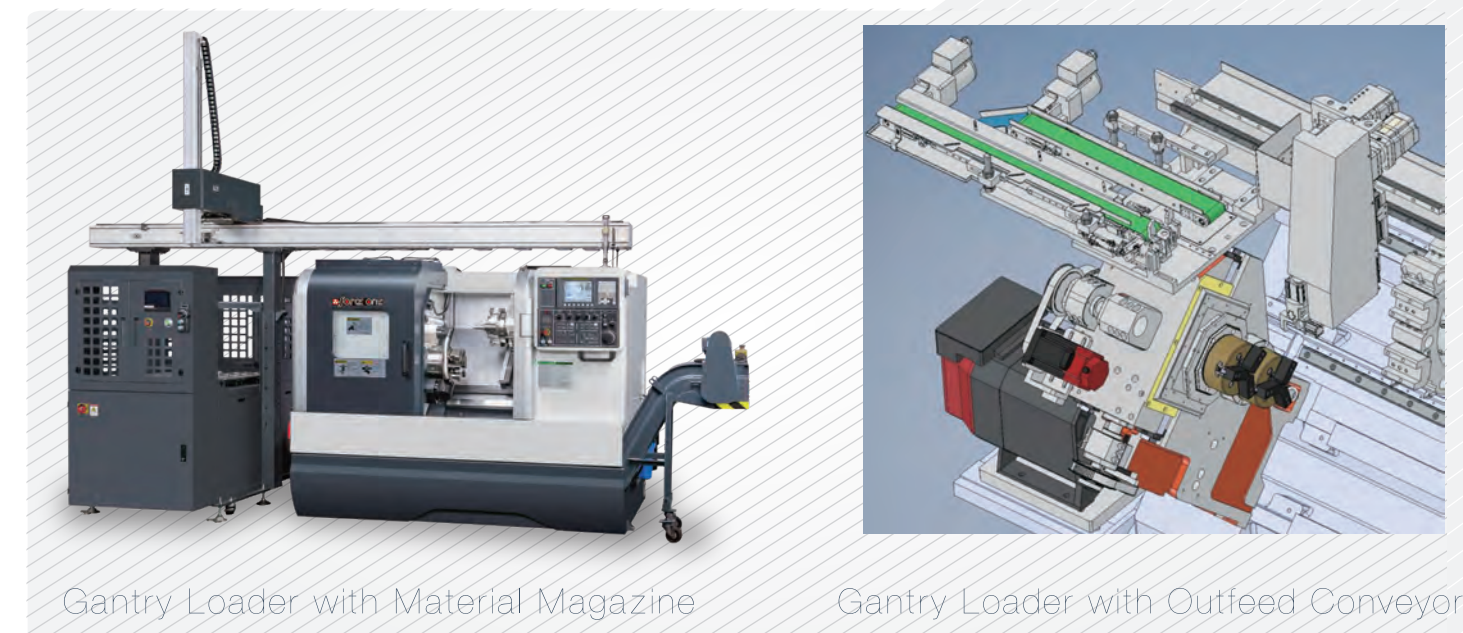
## AUTOMATED PRODUCTION LINE (OPT.)

### TWO AXES BAR FEEDER

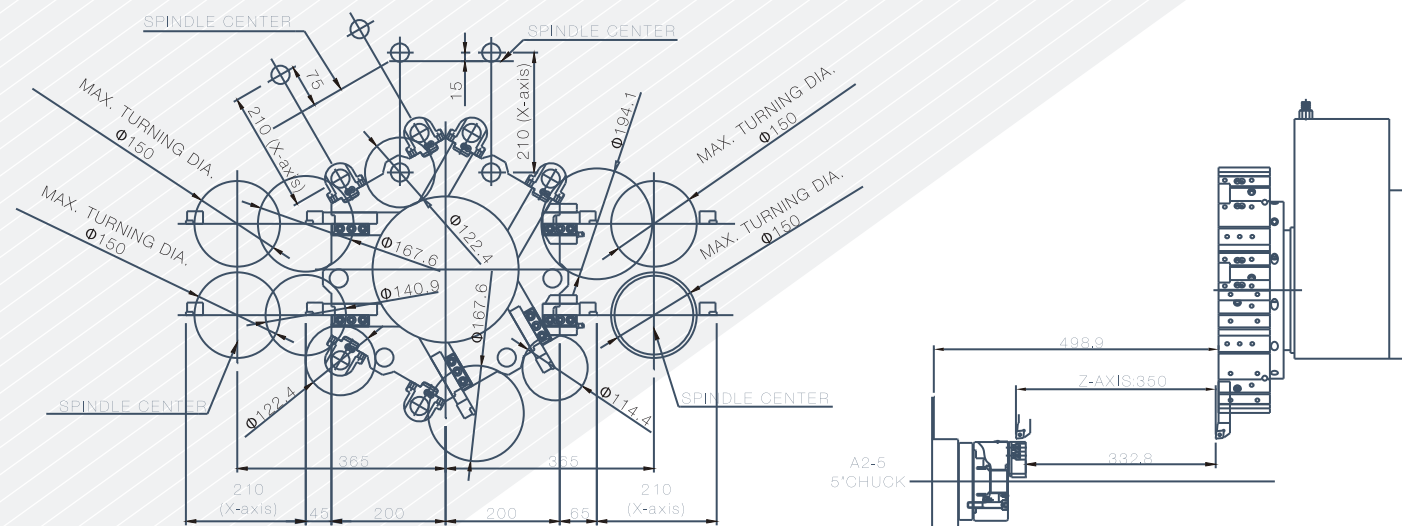
- The production process of the automated production line is as follows:
- The bar feeder with twin outfeeds delivers two bars into the parallel twin spindles of the turning center. After machining, the parts catcher will deliver the finished parts to the parts stocker.
- This production line can achieve two times machining efficiency with the same area occupation, low equipment investment costs, and low energy consumption.



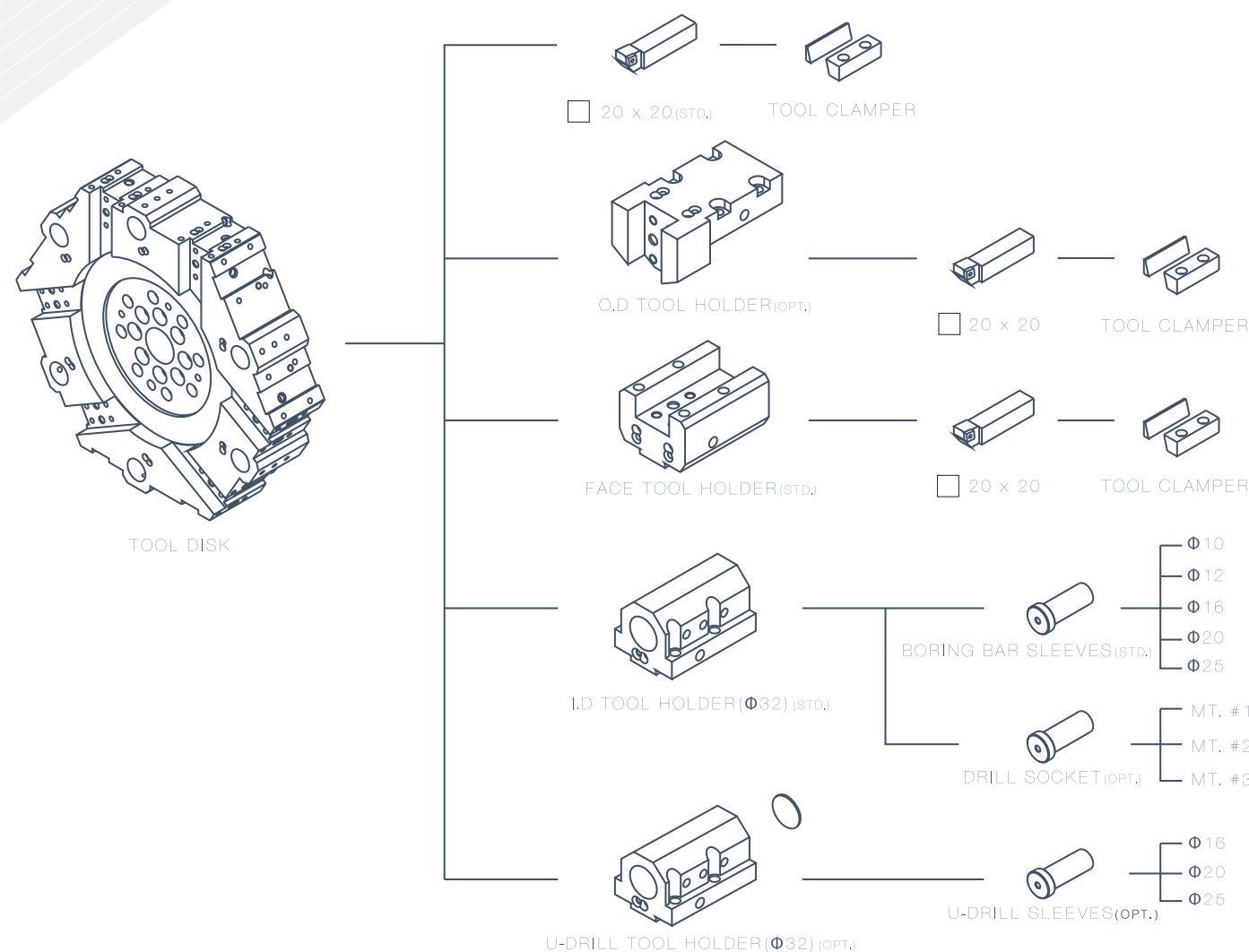
### GANTRY LOADER WITH MATERIAL MAGAZINE



## TOOL INTERFERENCE DIAGRAM



## TOOL SYSTEM



## SPECIFICATIONS

| MODEL         | ITEM                          | UNIT     | FCL-16PTS                                            |
|---------------|-------------------------------|----------|------------------------------------------------------|
| Capacity      | No. of axis                   |          | 4 axis(X/X1/Z/Z1)                                    |
|               | Swing over bed                | mm(inch) | Φ400 mm (15.74")                                     |
|               | Swing over carriage           | mm(inch) | Φ220 mm (8.66")                                      |
|               | Max. turning diameter         | mm(inch) | Φ150 mm (5.9")                                       |
|               | Max. turning length           | mm(inch) | 330 mm (13")                                         |
|               | Slideway type                 |          | Lineary guideway                                     |
| Spindle(1/2)  | Spindle nose                  |          | A2-5                                                 |
|               | Spindle bore                  | mm(inch) | Φ51 mm (2")                                          |
|               | Bar capacity                  | mm(inch) | Collet chuck:Ø42 mm(1.65)<br>3-jaw chuck:Ø38 mm(1.5) |
|               | Spindle speed                 | rpm      | 6000 rpm                                             |
| Chuck         | Hydraulic chuck               | mm(inch) | Ø138 mm (5.4")                                       |
| Turret        | No. of tools                  |          | 9stations(9T*2=18 tools)                             |
|               | O.D. tooling                  | mm(inch) | 20x20                                                |
|               | I.D. tooling                  | mm(inch) | Ø32 mm (1.25") P10                                   |
| X/Z Axis      | X axis travel                 | mm(inch) | 210 mm (8.26")                                       |
|               | X1 axis travel                | mm(inch) | ±2 mm (±0.07")                                       |
|               | Z axis travel                 | mm(inch) | 350 mm (13.77")                                      |
|               | Z1 axis travel                | mm(inch) | ±5 mm (±0.2")                                        |
|               | Rapid traverse rate (X axis)  | m/min    | 30 m/min                                             |
|               | Rapid traverse rate (X1 axis) | m/min    | 9 m/min                                              |
|               | Rapid traverse rate (Z axis)  | m/min    | 30 m/min                                             |
|               | Rapid traverse rate (Z1 axis) | m/min    | 9 m/min                                              |
|               | Cutting feed rate (X/Z axis)  | mm/rev   | 0.001-500                                            |
|               | Dia. Of ballscrew (X axis)    | mm(inch) | Ø32 mm (1.26") P10                                   |
|               | Dia. Of ballscrew (X1 axis)   | mm(inch) | Ø32 mm (1.26") P5                                    |
|               | Dia. Of ballscrew (Z axis)    | mm(inch) | Ø36 mm (1.42") P10                                   |
|               | Dia. Of ballscrew (Z1 axis)   | mm(inch) | Ø32 mm (1.26") P5                                    |
| Motor         | Spindle                       | kW       | β P22i (11/15 kW)                                    |
|               | X axis                        | kW       | β 12Bis (1.8 kW)                                     |
|               | X1 axis                       | kW       | β 4Bis (0.75 kW)                                     |
|               | Z axis                        | kW       | β 12is (1.8 kW)                                      |
|               | Z1 axis                       | kW       | β 4Bis (0.75 kW)                                     |
|               | Hydraulic pump                | kW       | 1.5 kW (2 HP)                                        |
|               | Coolant pump                  | kW       | 750 W (1 HP)                                         |
|               |                               |          |                                                      |
| Tank capacity | Hydraulic tank                | Liter    | 40                                                   |
|               | Coolant tank                  | Liter    | 115 Liter                                            |
| Machine size  | Length x width                | mm(inch) | 2440 x 1700 mm                                       |
|               | Height                        | mm(inch) | 1837 mm (72.3")                                      |
|               | Weight (N.W./G.W.)            | kgs      | 4500 kgs / 5050 kgs                                  |

- All specification, design and characteristics shown on this catalogue are subject to change without prior notice.

### STANDARD ACCESSORIES

- 3 bar coolant pump
- Automatic lubrication system
- Tool box
- Working light
- Three color alarm light
- Right outlet chip conveyor and bucket
- Hydraulic unit
- Heat exchanger for electric cabinet

### OPTIONAL ACCESSORIES

- 20bar coolant pump
- Oli skimmer
- Coolant chiller
- Coolant gun
- Air blow device
- Oli mist collector
- Parts catcher
- Automatic door
- Robot interface
- Bar feeder
- Linear scale
- Air gun
- Air conditioner for eletric cabinet
- Automatic POW off
- Gantry type parts loader with conveyor
- Gantry type parts loader with parts unloader